



UNIVERSITY OF  
BUCHAREST  
VERITAS ET SAPIENTIA

# 3<sup>rd</sup> International Conference on Neuroscience, Neuroinformatics, Neurotechnology and Neuro-Psycho-Pharmacology

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Conferința Internațională de Neuroștiințe,  
Neuroinformatică, Neurotehnologie și Neuro-psiho-  
farmacologie – ICON4N – ediția a 3-a, București,  
Biblioteca Academiei Române, 26-28 octombrie 2023



OCTOBER 26-28, 2023  
Bucharest, Romania

# 3<sup>RD</sup> INTERNATIONAL CONFERENCE ON NEUROSCIENCE, NEUROINFORMATICS, NEUROTECHNOLOGY AND NEURO-PSYCHO-PHARMACOLOGY

*We kindly invite you to participate in the*

***3<sup>rd</sup> International Conference on  
Neuroscience, Neuroinformatics, Neurotechnology and  
Neuro-Psycho-Pharmacology,***

*Bucharest, 26-28 October 2023*

*organized by the Romanian Academy – National Center for Brain Research, in collaboration with National Neuroscience Society of Romania, the Romanian Society for Automation and Technical Informatics and University of Bucharest.*

*The aim of the conference is to bring together experts from various areas of brain-related research, including neuroscience, clinical neurology, psychology, and pharmacology, with engineers in systems science, neuroinformatics, and brain-computer interfaces, to present new insights into the brain and mind to identify efficient computational theories, models and tools that will contribute to a better understanding of the brain and its functioning.*

*The opening ceremony and the invited papers will be presented in the Library Aula - “Heliade Radulescu” Hall of the Romanian Academy.*

# ORGANIZERS



Romanian Academy - National Center for Brain Research

National Neuroscience Society of Romania (NNSR)

Romanian Society for Automation and Technical Informatics (SRAIT)

University of Bucharest (UB)

# Honorary Chairman of the Conference

Constantin Popa, Romanian Academy

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Ioan Sacala, SRAIT, University Politehnica of Bucharest, Romania

Dragos Popescu, SRAIT, University Politehnica of Bucharest, Romania

# Keynote Speakers

Dorin Comaniciu, Artificial Intelligence and Digital Innovation, Siemens Healthineers, Erlangen, Germany

George Dragoi, Yale School of Medicine, New Haven, USA

Valentin Dragoi, University of Texas, McGovern Medical School, Houston, Texas, USA

Samer Hattar, National Institute for Mental Health, Bethesda, USA

Paolo Fabene, Universita Degli Studii din Verona, Verona, Italia

Amos Korczyn, Tel Aviv, Israel

Daniela Popa, Institut de Biologie de l'École Normale Supérieure, INSERM U1024, Paris, France

Jurgen Schwarz, University of Hamburg, Hamburg, Germany

# CONFERENCE PROGRAM

## Day 1

**Thursday, October, the 26<sup>th</sup>**

Location:

Romanian Academy Library – “Heliade Radulescu” Hall, Calea Victoriei 125, Bucharest

**8:30-9:00 Registration opening**

**9:00 – 9:15 Opening Ceremony**

**9:15 – 11:30 Plenary Session 1 – Chairs: Maria Luiza Flonta, Beatrice Radu**

09:15-09:45 **Dafin Mureşanu** - Brain reserve | Towards broadened understanding and concept operationalization

09:45-10:15 **Jurgen Schwarz** - Ether-à-go-go-related gene K channels modulate neuronal excitability and behavior

10:15-10:30 **Mihai Moldovan** - When axonal excitability goes bad and conduction velocity is preserved

10:30-11:00 **Daniela Popa** - Adaptive cerebello-forebrain coupling in normal and pathological conditions

11:00-11:30 **Paolo Fabene** - Epilepsy, inflammation and microbiota

11:30-11:50 Coffee break



### **11:50 – 13:30 Session 1 – Chair: Mihai Moldovan**

11:50-12:10 **Mihai Moldovan** - A thought about oscillatory electroencephalographic macrostates

12:10-12:30 **Miralena I. Tomescu, Claudiu Papasteri, Alexandru Ion Berceanu, Alexandra Sofonea, Ioana Carcea** - Personality moderates intra-individual variability in EEG microstate and spontaneous thoughts

12:30-12:50 **Alina Chivu, Simona A. Pascal, Alena Damborska, Miralena I. Tomescu** - EEG microstates in mood and anxiety disorders: a meta-analysis

12:50-13:10 **Alexandru Ion Berceanu, Onu Mihaela, Claudiu Papsteri, Alexandra Sofonea, Romina Boldasi, Ioana Carcea** - Insights from an fMRI study on role play: prosociality relates to lower connectivity in associated neural network

13:10-13:30 **Mihai Stancu** - Adaptive traits for temporal coding in the auditory brainstem

### **13:30-14:00 Sponsor presentation**

14:00 – 14:45 Lunch

### **14:45 – 16:30 Session 2 – Chairs: Ana-Maria Zagrean, Tudor Badea**

14:45-15:05 **Beatrice Radu, Bogdan Amuzescu** - A new FDA-approved antiepileptic drug, cenobamate, has pro-arrhythmogenic effects

15:05-15:25 **Lucian Hritcu, Nesrine S. El Sayed, Sara Abidar, Mohamed Nhiri, Weam W. Ibrahim** - Effects of *Ceratonia siliqua* L. aqueous leaves extract against A $\beta$ 1-42-induced cognitive deficit mice: Role of  $\alpha$ 7-nAChR in modulating Jak2/PI3K/Akt/GSK-3 $\beta$ / $\beta$ -catenin cascade

15:25-15:45 **Mara I Ionescu, Carmen Zahiu, Siobhain O'Mahony, Ana-Maria Zagrean** - The impact of the gut microbiome alteration during pregnancy on both maternal health and offspring neurodevelopment

15:45-16:05 **Raluca Paşcalău, Sergiu Şuşman, Tudor C Badea** - Human retinal cell types anatomy during fetal development

16:05-16:25 **Vladimir Muzyka, Rafael Trinio, George Oprita, Dan Domocos, Ana Maria Taranciuc, Alexandru Babeş, Gregory William Schwartz, Tudor C Badea** - Anatomic and physiologic characterization of neurons expressing Tusc5

16:25-16:45 **Vlad-Alexandru Toma, Alexandra Maria Nutu, Bogdan Razvan Dume, Lucian Barbu, Dragos Nicolae** - Non-determining neuroglial cells in the central nervous system of the crow

16:45-17:00 Coffee break

**17:00 – 19:00 Session 3 – Chairs: Aurel Popa, Alexandru Babeş**

17:00-17:20 **Aurel Popa** - Genetic conversion after stroke. A new therapeutic approach?

17:20-17:40 **Roxana Surugiu, Daiana Burdusel, Mihai Ruscu, Madalina Aldea, Andreea Cercel, Mihaela Abuzan, Aurel Popa, Dirk Hermann** - Extracellular Vesicles (EVs) as crucial predictive factors and therapeutic agents in stroke

17:40-18:00 **Florian Armasescu, Bogdan Amuzescu\***, **Roxana-Olimpia Gheorghe, Mihai Ghenghea, Dan Florin Mihailescu, Jean Ciurea** - Effects of acute near-infrared laser exposure on primary sensory neuron excitability and gating properties of heterologously expressed voltage-dependent Na<sup>+</sup> channels

18:00-18:20 **Cosmin Trif, Alexandra Banica, Alexandra Manolache, Andreea Anghel, Debora Hutanu, Teodora Stratulat, George Oprita, Stefana Petrescu, Sorin Tunaru, Alexandru Babeş\*** - Modulation of TRPM8 function by the prostacyclin receptor: involvement of Gq/11 proteins

18:20-18:40 **George Oprita, Dan Domocos, Alexandru Babeş** – The thyroid hormone triiodothyronine potentiates TRPM3 activity in mouse dorsal root ganglia neurons

18:40-19:00 **Razvan Boiangiu, Ion Brînză, Marius Mihăşan, Lucian Hritcu** - In silico and in vivo investigation of the 6-hydroxy-L-nicotine and cotinine biological effects

**19:00-19:30 SNN General assembly**

**19:30 Welcome cocktail**

Location: Romanian Academy Library, Calea Victoriei 125, Bucharest

## Day 2

### Friday, October of 27<sup>th</sup>

Location:

Romanian Academy Library – “Heliade Radulescu” Hall, Calea Victoriei 125, Sector 1, București

#### 8:30-9:00 Registration

#### 9:00 – 11:00 Session 4 – Chairs: Dafin Mureșanu, Bogdan Ovidiu Popescu

9:00-9:30 **Dafin Mureșanu** - The impact of microcirculation on disability prevention

9:30-10:00 **Bogdan Ovidiu Popescu** - Hypertensions and neurodegenerative diseases

10:00-10:30 **Cristina Tiu** – Advances in acute stroke phase treatment in Romania

10:30-11:00 **Amos Korczyn** - Is Alzheimer’s disease a disease?

11:00 – 11:20 Coffee break

#### 11:20 – 13:20 Plenary Session 2 – Chairs: Ioan Dumitrache, Tudor Badea

11:20-11:50 **Dorin Comaniciu** - Artificial Intelligence and Neuroscience: The Road Ahead

11:50-12:20 **Valentin Dragoi** - Cortical circuits for information processing and decision making

12:20-12:50 **George Dragoi** - Neuronal ensembles underlying internally generated representations

12:50-13:20 **Samer Hattar** - How does the retina influence the brain and behavior

13:20 – 14:20 Lunch

### **14:20 – 16:00 Session 5 – Chairs: Ioan Dumitrache, Simona Caramihai**

14:20-14:40 **Ioan Dumitrache, Simona Caramihai, Dragoş Popescu** – Some aspects on brain modelling as a complex adaptive system

14:40-15:00 **Ionuţ Predulescu, Ioan Dumitrache, Simona Caramihai** – Automated system for detection of cortical diseases using EEG analysis, virtual reality and artificial intelligence

15:00-15:20 **Stefan Trausan-Matu** - Analysis of Natural Language Generation with Deep Neural Networks

15:20-15:40 **Sorin Grigorescu** - AI-based operating system for enhanced autonomy in ground and aerial robotics

15:40-16:00 **Maria Mernea, George Gamazeliuc, Andreea-Mădălina Gurguţă** - Bioinformatics analysis of natural compounds with anxiolytic effect using target proteins interaction networks

### **16:00 – 16:30 Sponsor presentation**

16:30 –16:50 Coffee break

### **16:50 - 18:50 Session 6 – Chair: Andrei Miu**

16:50-17:10 **Andra Vlaicu, Simina Piţur, Cinzia Pocol, Alexia Pinoşanu, Sergiu Cîmpean, Amalia Goia, Larisa Lorinţi, Irina Nicolescu, Alex Profir, Fatima Hamadneh, Andrei C. Miu\*** - Emotion regulation and psychopathology: Neural and neuroendocrine mechanisms

17:10-17:30 **Alexia Pinoşanu, Simina Piţur, Alexandra Iacob, Fatima Hamadneh, Andrei C. Miu\*** - How can we assess emotion regulation in the laboratory? A focus on designs with ERP and autonomic measures

17:30-17:50 **Andra Vlaicu, Simina Piţur, Cinzia Pocol, Alexia Pinoşanu, Sergiu Cîmpean, Amalia Goia, Larisa Lorinţi, Irina Nicolescu, Alex Profir, Fatima Hamadneh, Andrei C. Miu\*** - Emotion regulation and cortisol reactivity: Preliminary data from a prospective study

17:50-18:10 **Simina Piţur, Ştefania Crişan, Alexandra Iacob, Róbert Balázs, Aurora Szentágotai-Tătar, Andrei C. Miu\*** - Childhood maltreatment and emotion regulation: Neural markers of risk for psychopathology?

18:10-18:30 **Gabriela Mariana Marcu, Ana-Maria Zăgrean** - QEEG Neuromarkers of complex childhood trauma - pilot study and preliminary data

18:30-18:50 **Ramona Ceciu** - Cognitive-behavioral and socio-cultural correlates of emotion regulation

## Day 3

### Saturday, October 28<sup>th</sup>

Location: Faculty of Biology, Bucharest University, Splaiul Independentei 91-95, Bucharest

#### 9:00-10:40 Session 7 - Chairs: Violeta Ristoiu, Bogdan Amuzescu

9:00-9:20 **Shurooq Shaher, Bianca Galateanu, Ariana Hudita, Cristian-Emilian Pop, Dan Florin Mihailescu, Bogdan Amuzescu\*** - NMDAR activation, cytotoxicity and oxidative stress induced by aspartame in native and heterologously expressed cell lines

9:20-9:40 **Violeta Maria Caragea** - Goal-directed skilled action in rats is modulated by the dopamine receptors found in the fastigial nucleus

9:40-10:00 **Roberta Stoica, Mihai Radu, Liviu Craciun, Stela Rodica Lucia Patrascu, Beatrice Radu** - Effects of two radiotherapy techniques at the cerebrovascular endothelium level

10:00-10:20 **Tudor Selescu, Mirela Iodi-Carstens, Earl Carstens** - Role of four thermosensitive TRP ion channels in thermal preference of male and female mice

10:20-10:40 **Sebastian Isac, Irina Matache, Mara Ioana Ionescu, Bogdan Pavel, Ana-Maria Zagrean** - The cumulative detrimental effect of the general anaesthesia on the immature brain after perinatal asphyxia

10:40-11:00 Coffee break

#### 11:00 – 12:30 Blitz oral presentations & Posters session

1. Alina Ostafi, Marina Bratu, Florentina Pluteanu - The effect of nerve growth factor on vascular fibroblasts
2. Ana-Maria Matota, Alexandru-Catalin Paslaru, Vlad-Petru Morozan, Mihai Stancu, Laurentiu Tofan, Dorottya Szocs, Alexandra Mocanu, Bogdan Pavel, Ana-Maria Zagrean, Leon Zagrean, Mihai Moldovan - Hyperexcitability in a rat model of absence epilepsy: higher EEG reactivity during deep anesthesia
3. Andreea Cercel, Abuzan Mihaela, Roxana Surugiu, Aurel Popa, Ruscu Mihai - Axonal growth in the young adult brain after an ischemic stroke

4. Andreea Violeta Grosu, Marie Pertin, Guylene Kirschmann, Alexandru Filippi, Alexandru Florian Deftu, Violeta Ristoiu - Spared nerve injury model of neuropathic pain induces a specific microglia activation pattern at the spinal cord level
5. Andrei Bordeianu, Alexandru-Catalin Paslaru, Vlad-Petru Moroza, Laurentiu Tofan, Mihai Stancu, Bogdan Pavel, Carmen Denise Zahiu, Alexandra Mocanu, Andrei Ilie, Alexandru Calin, Ana-Maria Zagrean, Leon Zagrean, Mihai Moldovan - Burst-Suppression EEG reactivity in detecting post-ischemic brain injury: an experimental rat study
6. Andrei Teodor Bratu, Florin Zamfirache, Beatrice M Radu - Role of prefrontal cortex in processing aversive auditory and visual stimuli
7. Claudia-Ioana Draghici, Roberta Stoica, Mihai Radu, Beatrice M Radu - Cenobamate upregulates P-glycoprotein, while downregulates tight junction proteins in accordance with blood-brain barrier permeabilization
8. Claudia Moldoveanu - Histological and immunohistochemical aspects of the central nervous system in Alzheimer's disease and the study of antioxidant action as a prophylactic strategy
9. Cristian Ciotei, Didina Catalina Barbalata, Ioana Alexandra Dogaru, Carmen Denise Zahiu, Diana-Maria Chitimus, Vlad-Petru Moroza, Tasnim Chazli, Mara-Gabriela Belcin, Mara-Ioana Ionescu, Ana-Maria Zagrean - The trials and errors of studying the impact of gestational gut microbiome disturbance and perinatal asphyxia on the neurodevelopmental reflexes of rat offspring
10. David-Ionut Băcioiu, Alina-Ana-Maria Botezatu, Dan Domocoș, Florentina Cojocar, Dana Cucu - Crosstalk between TRPA1, TRPM8 and EGF receptor in glioblastoma
11. Florin Zamfirache, Beatrice M Radu, Gabriela Prundaru - The impact of sertraline and social rehabilitation on a long-term depression study on rats
12. Ileana Daria Dobre, MG Barbu, Tudor C Badea - Retinal ganglion cell types of the mouse area centralis
13. Ianis Kevin Boboc, Alexandru Cojocar, Tudor A. Balseanu, Maria Bogdan, Cornelia D. Calina, Bogdan Catalin – How continuous use of ion channel blockers affects microglial morphology and function in a murine Alzheimer's model.
14. Laurentiu Tofan, Felicia Mihai, Irina Oane, Ana-Maria Zagrean, Andrei Barborica, Ioana Mindruta - Exploration of the brain connectivity in patients with pharmaco-resistant epilepsy and visual hallucinations
15. Melania Magercu, Gabriela Chiritoiu, Cristian Munteanu,; Violeta Ristoiu - Iba1 down-regulation in primary rat microglia: differential effects induced in defined-medium vs serum-supplemented in vitro systems

16. Ștefan-Alexandru Țîrlea, Armand Nicolicioiu, Vlad-Petru Morozan, Andrei Iacovache, Diana-Andreea Ilie, Ana-Maria Mațotă, Biana Ioana Guțu, Mihai Stancu, Leon Zăgrean, Ana-Maria Zăgrean - Cost-effective alternative for long-term sleep analysis in freely moving mice
17. Valentin Ionescu - an equation for an impossible task. does the brain-personality system behave in a thermodynamic manner? Hot brain hypothesis
18. Vlad-Petru Morozan, Alexandra Mocanu, Andrei Bordeianu, Mihai Stancu, Ana-Teodora Chirilă, Alexandru Călin, Alexandru-Cătălin Pâslaru, Laurențiu Tofan, Ana-Maria Zăgrean, Leon Zăgrean, Mihai Moldovan - Investigating the relationship between default EEG macrostate reactivity and anaesthetic depth in response to photic stimulation: a rat model

**12:30-13:00 Closing ceremony**

**Abstract Volume – *Fiziologia – Physiology Journal Supplement 2023*, available at:**

[http://revista\\_fiziologia.umft.ro/archive.html](http://revista_fiziologia.umft.ro/archive.html)

# Conference Venue

The conference attendance will be organized in the “Heliade Radulescu” hall of the Romanian Academy Library, Romanian Academy - Calea Victoriei 125, Bucharest, Romania







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